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Expansion of the geographic distribution of *Faramea nitida* Benth. in the restinga of Maranhão state, northeastern Brazil

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Abstract: In this study, we present new records of *Faramea nitida* that extend the range of this species in Maranhão state, Brazil. The new data were the result of fieldwork by us in restinga areas of São José de Ribamar and Alcântara districts. This report highlights the rediscovery of a species after many years (30 to 70 years) and shows the necessity for more floristic and taxonomic studies on extreme northeastern Brazil.

Key words: coastal vegetation; species rediscovery; Rubiaceae; São Luís

The genus *Faramea* Aubl. (tribe Coussareeae) has a Neotropical distribution and comprises 150 species distributed from Mexico to Argentina (Delprete 2004). In Brazil, there is approximately 90 species of *Faramea* (Müller 1881), mostly abundant in the Atlantic and Amazon Forests but with reports from Cerrado areas and regions of transition between Caatinga and Cerrado (Jardim and Gomes 2014).

Floristic knowledge of Maranhão state is restricted to just a few studies in Cerrado areas (Muniz et al. 1994; Medeiros et al. 2008; Silva et al. 2008; Conceição and Castro 2009; Reis and Conceição 2010). There is only one study on the restinga of Maranhão state (Cabral-Freire and Monteiro 1993), which is an important contribution to the understanding of coastal vegetation.

We report here *Faramea nitida* Benth. from restinga areas of Maranhão. Ours are the first records for this species from restinga of Maranhão state. Our rediscovery of this species exemplifies restinga the urgent need of more floristic studies on the coastal vegetation of Maranhão, which is fragmented and facing an accelerated

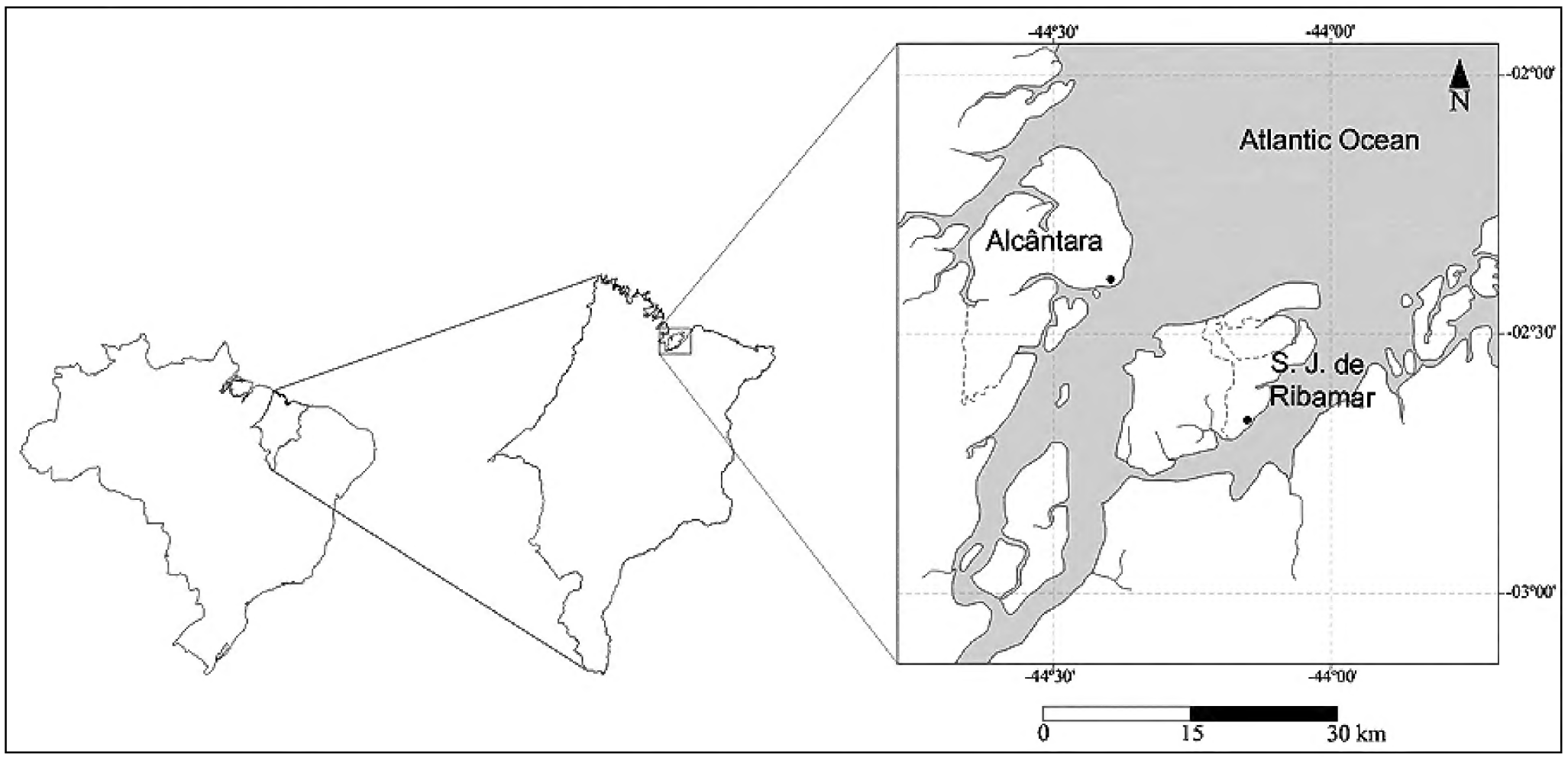

Figure 1. Localities of new records of *Faramea nitida*, Maranhão state, Brazil.

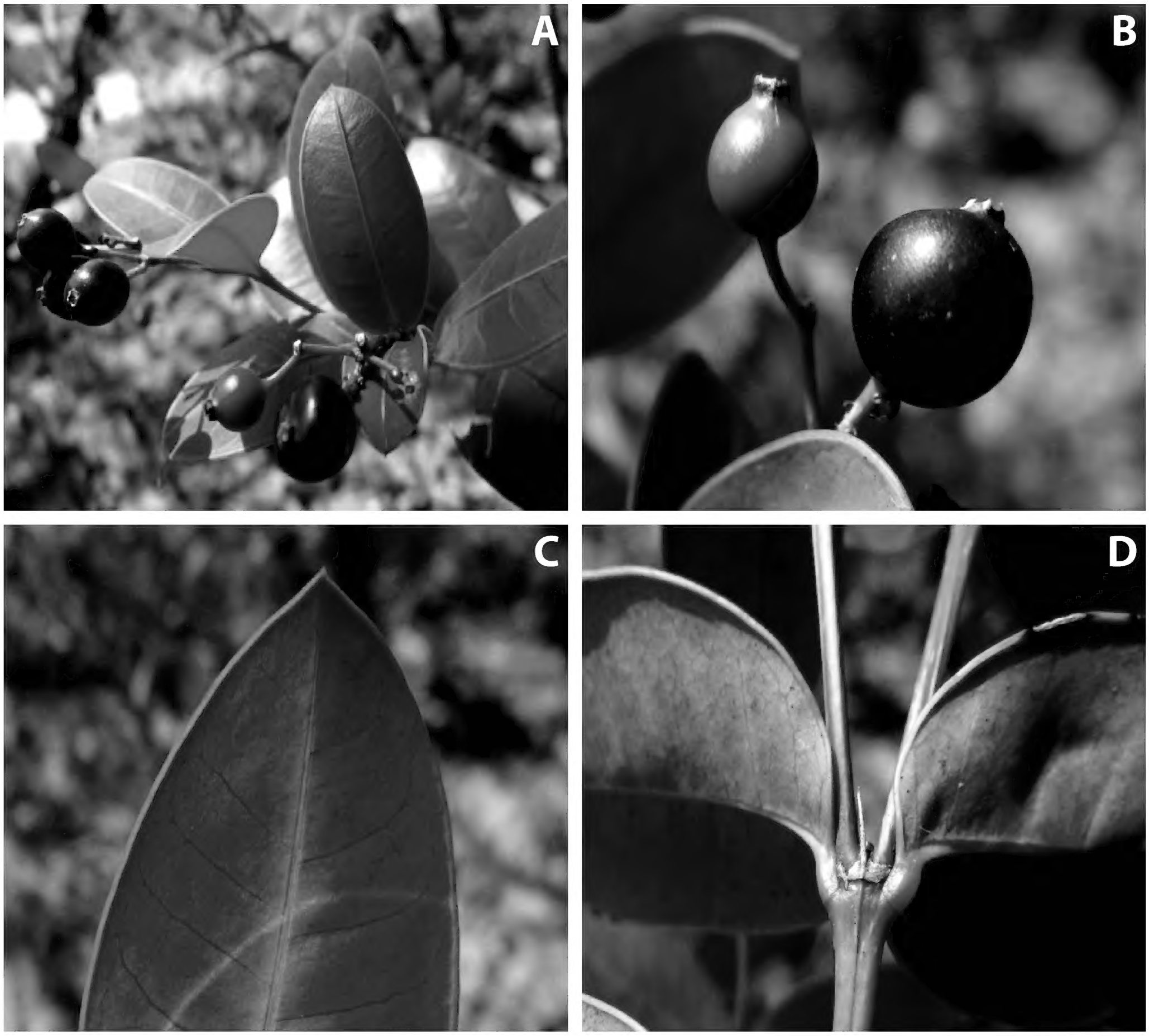

Figure 2. Details of the structures of *Faramea nitida* Benth collected in restinga vegetation in Maranhão state. **A:** Branches. **B:** Fruits. **C:** Detail of apex in the leaf. **D:** Detail of stipules.

rate of destruction (Santos-Filho and Zickel 2013).

Collections of *F. nitida* were recently collected by us at two sites having restinga vegetation: São José de Ribamar (Sítio Aguahy, 02°39′4″ S, 44°08′29″ W) and Alcântara (Itatinga beach, 02°31′51.6″ S, 044°16′45.8″ W) restinga (Figure 1). Individuals were sampled, photos were taken, and a comparison with exsiccates from the database of speciesLink (CRIA 2014) was performed.

Faramea nitida is recognized by its thin and rigid stipules; rigid, acute and slightly mucronate apex; round and cordate basis; well-defined margin with a line that contrasts with color of leaf blade; reduced petiole; corymb inflorescence; tetramerous flowers; with green and purple fruits when mature (Figure 2).

Previous records of *F. nitida* from Maranhão do not have habitat descriptions or details and data includes only the name of the municipality from where they originated. Based on the municipalities indicated, it was assumed that the specimens were collected from Cerrado areas. In this context, we found the following records: Mirador (10/IV/1998, *G.M. Conceição 311*, EAC 27069); Grajaú (01/I/1983 *E.L. Taylor, Rosário & Silva 1328*, MOBOT_BR 3121008; 23/IV/1983, *E.L. Taylor E1328*, NY 950169) and Barra do Corda (01/I/1983, *G.E. Schatz et al. 795*, MOBOT_BR 3120788; 02/III/1983, *G. E. Schatz 795*, NY 950170); these were collected between 1983 and 1998. In Alcântara, there are only two records dating from 1984 (*A.M. de Carvalho 2080*, 04/II/1984, CEPEC 33977, with duplicates in NY 950171 and HUEFS 13545), but there is no description of the environment in which they were collected. There is also one collection (MBM 157026) that is undated, making it impossible to it investigate further.

From the Island of Maranhão, which encompasses the cities of São Luís, Paço do Lumiar, Raposa and São José de Ribamar (Araújo et al. 2009), there is only one record (*R. Froes 11648*), described as originating from "Island of Sao Luiz" in 1939 (MOBOT_BR 3121112). The precise locality for this record is unknown because the Island of São Luís, or the Island of Maranhão (Araújo et al. 2009), is composed of four cities. It is of interest that Cabral-Freire and Monteiro (1993) made a floristic study in the Island of Maranhão and did not list *F. nitida*.

The occurrence of this species in restinga might be, among other factors, due to a transition of the coastal zone with Cerrado, mostly where sand lines penetrates inland (Goodland 1971). This also demonstrates the importance of the neighboring ecosystems (Scarano 2002) as sources of species dispersal and colonization in areas of Restinga.

Almeida Jr. et al. (2012) emphasized the need to protect coastal ecosystems, including resting, that are still forested, because they might harbor endangered species. Our study ratifies the lack of information for coastal vegetation in Maranhão and reports an extension to the known distribution of *F. nitida* in the state. There are likely other species that have not been widely reported due to the lack of systematic surveys (Almeida Jr. et al. 2011; Almeida Jr. et al. 2012; Santos et al. unpublished data). Although species such as *Dioclea violacea* Mart. ex Benth., *Dichorisandra hexandra* (Aubl.) Kuntze ex Hand.-Mazz., *Duguetia surinamensis* R.E.Fr., *Melochia parvifolia* Kunth, *Myrcia splendens* (Sw.) DC., *Ouratea fieldingiana* Engl. and *Utricularia fimbriata* Kunth are found along the northeast coast (Lima and Almeida Jr. unpublished data; Serra et al. unpublished data), they are not recorded from restinga vegetation of Maranhão; we believe that this is due to the low sampling effort. Therefore, more attention should be directed to survey the flora of restinga areas, which are undergoing accelerated destruction, before they are lost forever.

Material examined: MA, Alcântara, restinga da praia de Itatinga, *E.B. Almeida Jr. & A.R.R. de Castro 1304*, 19/VII/2013 (MAR); *E.B. Almeida Jr. & A.R.R. de Castro 1305*, 18/VII/2013 (MAR); *B.E.F. Correia 231*, 14/VI/2014 (MAR); *B.E.F. Correia 235*, 14/VI/2014 (MAR); *B.E.F. Correia 219*, 14/VI/2014 (MAR). São José de Ribamar, restinga da Merck, *E.B. Almeida Jr. & F.C.V. Serra 70*, 19/I/2013, (MAR); *F.C.V. Serra 89*, 20/V/2013 (MAR).

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